### Operating & Installation Instructions

**XSEL™ Process Gauge**  
**Type 2XX.34**  
**SIZE 4½" & 6" SOLID FRONT**

#### IX. Replacement Parts

<table>
<thead>
<tr>
<th>Part Description</th>
<th>4½&quot; Part No.</th>
<th>6&quot; Part No.</th>
</tr>
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<tbody>
<tr>
<td>Threaded ring</td>
<td>2086000</td>
<td>4006755</td>
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<tr>
<td>Acrylic window</td>
<td>4000021</td>
<td>2246104</td>
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<tr>
<td>Instrument glass window</td>
<td>0561134</td>
<td>1111710</td>
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<tr>
<td>Laminated safety glass window</td>
<td>0561150</td>
<td>0154075</td>
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<tr>
<td>Restrictor (SS) (0.6 mm I.D.)</td>
<td>0029122</td>
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<tr>
<td>Restrictor (SS) (0.3 mm I.D.)</td>
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<td>Restrictor (Monel®) (0.6 mm I.D.)</td>
<td>0607797</td>
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<td>Restrictor (brass) (0.6 mm I.D.)</td>
<td>4324</td>
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<tr>
<td>Window o-ring</td>
<td>0564354</td>
<td>2016818</td>
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<tr>
<td>Adjustable pointer</td>
<td>2087431</td>
<td>1656244</td>
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<tr>
<td>Case (blow-out back separate)</td>
<td>2085993</td>
<td>4006747</td>
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<td>Fill plug</td>
<td>0599705</td>
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<td>Vent plug</td>
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<td>Socket o-ring</td>
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<td>Blow-out back (LM)</td>
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<td>Back o-ring (for dry gauges)</td>
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<tr>
<td>Membrane LM (for glycerine or silicone)</td>
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<tr>
<td>Membrane LM (for fluorocarbon)</td>
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<tr>
<td>Membrane LBM (for glycerine or silicone)</td>
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<td>Filling kit LM (for glycerine &amp; silicone)</td>
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<td>Filling kit LBM (for fluorocarbon)</td>
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<tr>
<td>Filling kit LBM (for glycerine &amp; silicone)</td>
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<td>Movement for vacuum ranges</td>
<td>4001842</td>
<td>2054761</td>
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<tr>
<td>Movement for 15 psi to 60 psi</td>
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<td>Movement for 100 psi and up</td>
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#### X. Warning

Pressure gauges must be selected and installed so that the possibility of failure resulting in injury or damage caused by misuse or misapplication is minimized. For correct selection and use of gauges, refer to ASME B40.1, which can be obtained from The American Society of Mechanical Engineers, Three Park Avenue, New York, NY 10016 - 5990. Important factors for proper gauge selection are:

**Process:** Wetted parts must be compatible with the measured media.

**Pressure:** The range of the gauge should generally be twice the working pressure. The working pressure in all cases should be limited to 75% of the gauge range. Where alternating pressure and pulsation are encountered, working pressure should be limited to 2/3 of the gauge range.

**Pulsation / Vibration:** Pressure pulsation and vibration could result in fatigue failure of the measuring system. Therefore, dampening provisions such as liquid filling of the gauge, installing flow restricting devices or isolating from the vibration source should be considered.

**Temperature:** Excessive temperature exposure may result in damage to the measuring system and/or gauge outer parts, case, gasket, and window. Preventive temperature lowering devices such as the WIKA cooling element or a pigtail siphon should be considered.

**Liquid Fill:** Be sure that the filling liquid can safely mix with the process fluid.

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In keeping with and for purposes of product improvement, WIKA reserves the right to make design changes without notice.
I. General
WIKA gauges are designed and built to deliver long and reliable service under conditions of severe stress. For inquiries concerning gauge selection and operation, the American Society of Mechanical Engineers specification ASME B40.100 should be consulted. Additional information can be obtained from WIKA Instrument Corporation, Lawrenceville, Georgia, or from any authorized WIKA distributor.

II. Installation
Gauges should always be mounted by using the wrench flats (squares) provided on the pressure connection. Under no circumstances should the pressure connection be tightened by applying force to the gauge case.

It is preferable to mount gauges in a location free of mechanical vibration. If this is not possible, a liquid filled gauge or a flexible tube connection may be necessary.

The gauge should be located so that it is not exposed to abnormally low or high temperatures. This may cause an additional temperature error, depending on the deviation from the reference temperature of 73°F (23°C). For steam service, the gauge must be protected by a water-filled siphon.

If severe pulsation is present, the gauge should be equipped with a properly sized orifice restrictor.

III. Maintenance
All gauges should be checked regularly for wear, loss of accuracy, and proper functioning by comparing them to a precision test gauge or a dead weight tester. Replace all broken or damaged parts immediately.

IV. Disassembly
Tools Needed:
- Bench vise
- Flat head screwdriver
- Threaded Ring Tool: WIKA p/n 1205838
- Pointer Puller Tool: WIKA p/n 9091823
- Pointer Puller Handle: WIKA p/n 2246954
- Arbor Press: WIKA p/n 1325116
- Press Plate: WIKA p/n 1410946

NOTE: WIKA has developed special service tools which make gauge repair and conversion much easier. Tools are available from WIKA or your local distributor for a nominal charge.

1. Threaded Ring Removal
Place the gauge into the bench vice face-up by clamping the connection (gauge stem) firmly on the wrench’s flat sides.

FIG. 1

2. Window Removal
If the window sticks to the o-ring and will not come out, you have to remove the blow-out back. See step 3.

There is an overflow hole located on the “solid front” wall on the gauge at the 12 o’clock position. Insert a small screwdriver into the pointer Puller Handle so that it functions similar to that of pliers. Insert the tip of the Pointer Puller Handle into the center of the pointer. Then insert the notch of the Pointer Puller Tool between the pointer shaft and the other end above the Pointer Puller Handle. Squeeze gently on the Pointer Puller Tool and the adjustable pointer should pop upward.

FIG. 2

3. Blow-out Back Removal
To remove the blow-out back, you will need a bench vise and a screwdriver. Before starting, look at the back of the gauge. Please note the two small openings near the two upper snap-in tabs in the blow-out back.

Insert the screwdriver into the opening and pry out the tab (Fig. 3). Repeat this step on the other side and the blow-out back will pop out.

4. Pointer Removal
To remove the adjustable pointer you will need to use the Pointer Puller Tool (WIKA p/n 9091823) and Pointer Puller Handle (WIKA p/n 2246954). Remove the tip of the Pointer Puller Tool to hand thighten the threaded ring by one quarter turn with 16 lbf-ft of torque.

FIG. 3

5. Restrictor Assembly
A restrictor is recommended for all applications that will encounter pressure surges, pulsations or fluctuations. To install a restrictor, locate the bottom center of the socket where you will notice a thread indicator. Set the pointed end of the threaded restrictor into the bore and turn clockwise until tight using a small flat headed screwdriver. Once tight, hold torque the restrictor with 0.5 to 1.0 ft-lbs of torque to ensure it will not come loose during operation.

FIG. 4

VI. Prepared for Liquid Filling
Effective July 2007 all Lower Mount (LM) process gauges will come equipped with a membrane so the gauge can be field-filled without the addition of extra parts. All process gauges prepared for liquid filling will have printed on the warning label “MEMBRANE INSTALLED FOR LIQUID FILLING”. For all Lower Back Mount (LBM) process gauges the membrane (WIKA p/n 1654250) needs to be installed to convert to a liquid-filled gauge.

FIG. 5

VII. Liquid-Filled Conversion
To convert process gauges manufactured prior to July 2007 and all Lower Back Mount (LBM) process gauges to the liquid-filled case, the membrane will need to be installed. First remove the blow-out back as described in Section IV, Item 3 (Blow-Out Back Removal). Then replace the o-ring with the membrane (WIKA p/n 1053019). Lubricate the case of the membrane sealing surface with glycerine or silicone. Then press the blow-out back into the case as described in Section V, Item 4 (Blow-Out Back Assembly).

FIG. 6

VIII. Liquid Filling Of Dry Case
For gauges with pressure ranges of 60 psi or less, the pointer must be removed. To adjust the pointer, use the adjustment screw on the pointer as described in Section V, Item 2 (Pointer Assembly and Adjustment). Follow Fig. 4 in order to compensate for the liquid fill.

Note that for the -30” Hg, set the pointer above zero. For all other ranges, set the pointer below zero by the amount shown in Fig. 4.

Remove the filling plug from the top of the gauge (12 o’clock) with a small screwdriver. Turn the gauge over onto its face. On the back cover of the gauge, you will see a small vent hole on the blow-out back (Fig. 5). If you have the liquid filling kit, use the vent plug provided with the kit to close the vent hole. If you do not have the kit, you can seal the hole with a piece of tape or cover it with your finger while filling. This allows the membrane to maintain an air pocket which will help alleviate temperature induced zero shifts.

Fill the gauge with the correct fluid for your application using a small funnel or tube. The gauge must be filled in an upright position. Be careful not to touch the Bourdon tube, as this may cause a shift in the gauge calibration. The fluid level should be as full as possible once you have the correct fluid level, clean the area around the filling hole, and insert the filling plug. Make sure the plug is seated squarely. Next, remove the vent plug or object used to block the vent hole located on the blow-out back. The final step is to check the zero position of the pointer. If the pointer is not within the tolerance field of the zero mark, the pointer must be readjusted. To do this, remove the gauge, reversing the steps above, adjust the pointer and then repeat the procedure from the start.